



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/718,025	11/20/2003	Tomohiro Oshiyama	KOT-0085	8793

7590 09/20/2007  
CANTOR COLBURN LLP  
55 Griffin Road South  
Bloomfield, CT 06002

EXAMINER
----------

THOMPSON, CAMIE S

ART UNIT	PAPER NUMBER
----------	--------------

1774

MAIL DATE	DELIVERY MODE
-----------	---------------

09/20/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/718,025

Applicant(s)

OSHIYAMA ET AL.

Examiner

Camie S. Thompson

Art Unit

1774

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on RCE filed July 12, 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-35 and 43-51 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 22-35 is/are allowed.
- 6) ☒ Claim(s) 1-21 and 43-51 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on July 12, 2007 has been entered.
2. Applicant's amendment and accompanying remarks filed July 12, 2007 are acknowledged.
3. The rejection of claims 1 and 5-7 under 35 U.S.C. 102(e) as being anticipated by Hosokawa, U.S. Patent Number 6,660,410 is withdrawn due to applicant's arguments.
4. The rejection of claims 1-4 under 35 U.S.C. 103(a) as being unpatentable over Hosokawa, U.S. Patent Number 6,660,410 in view of Suzuri et al., U.S. Patent Number 6,690,364 is withdrawn due to applicant's arguments.

### *Claim Rejections - 35 USC § 102*

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

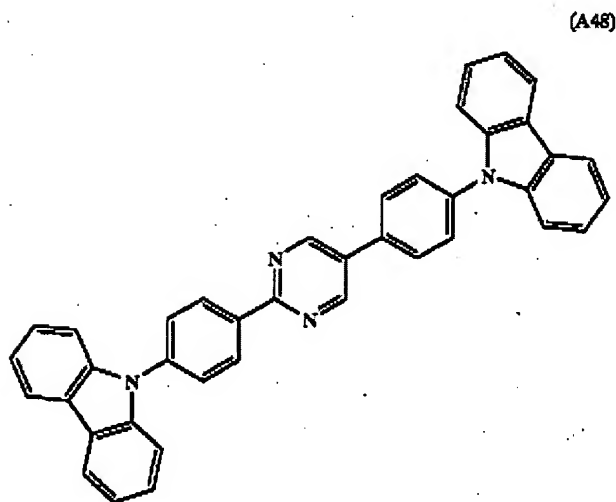
A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1 and 5-7 are rejected under 35 U.S.C. 102(e) as being anticipated by Iwakuma et al., U.S. Pre Grant Publication 2004/0086745.

Art Unit: 1774

Iwakuma discloses an organic electroluminescence device comprising an organic thin film layer disposed between an anode and a cathode (see paragraph 0008 and 0012). Iwakuma discloses that the organic thin film layer comprises a compound



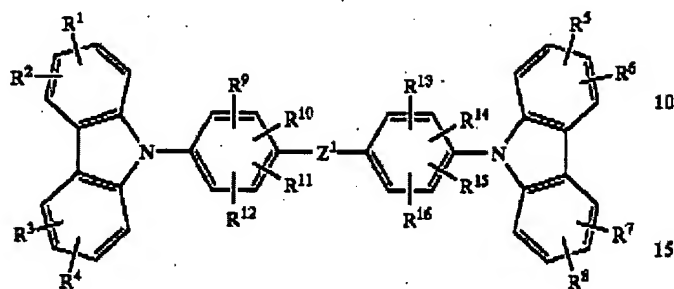
(see compound A48 – page 14). The

reference reads on the present claims when  $X^1$  of the present claims is  $\text{---}X_a\text{---}$ , which is a divalent 6-membered monocyclic heterocyclic ring that is unsubstituted as per instant claim 1. It is disclosed in paragraph 0065 that the organic thin film layer can also comprise phosphorescent organometallic complexes wherein the metal is osmium, iridium or platinum (see also paragraph 0066).

7. Claims 1-21 are rejected under 35 U.S.C. 102(e) as being anticipated by Sato et al., U.S. Patent Number 6,893,743.

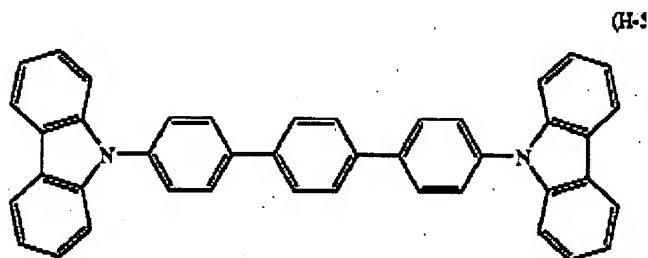
Sato discloses an organic electroluminescent device comprising a light-emitting layer sandwiched between an anode and a cathode (see column 4, lines 26-45). The reference discloses that the light-emitting layer comprises a host material

Art Unit: 1774



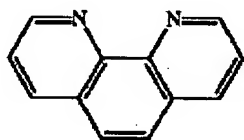
wherein Z<sup>1</sup> can be  and R<sup>1</sup> to

R<sup>16</sup> can be hydrogen as per instant claim 15 with the compound being H4 for the present claims (see column 7, line 1-column 8, line 20). Formula (H-5) found in column 11 of the reference,



reads on formula (n) for present claim 8

wherein A<sub>1</sub> to A<sub>4</sub> are represented by -C(R<sub>k2</sub>) with R<sub>k2</sub> being hydrogen. It is disclosed in column 8, lines 20-23 that Z<sup>1</sup> can be a divalent aromatic heterocyclic group which may have a substituent as required by formula (j) in present claim 1. Column 4, lines 26-43 of the reference disclose that the light-emitting layer also comprises a phosphorescent material represented by an organic metal complex wherein the metal can be osmium, platinum or iridium as per instant claims 6-7 (see also column 50, lines 1-10). Additionally, the reference discloses a hole-blocking layer sandwiched between the light emitting layer and the cathode (see column 77, lines 31-40) wherein the hole-blocking layer can comprise a phenanthroline compound with a

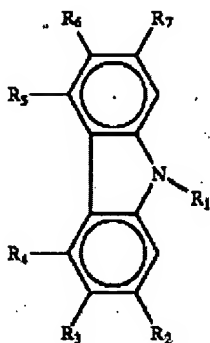


structure

Art Unit: 1774

8. Claims 43-51 are rejected under 35 U.S.C. 102(e) as being anticipated by Thoms et al., U.S. Pre Grant Publication 2003/0205696.

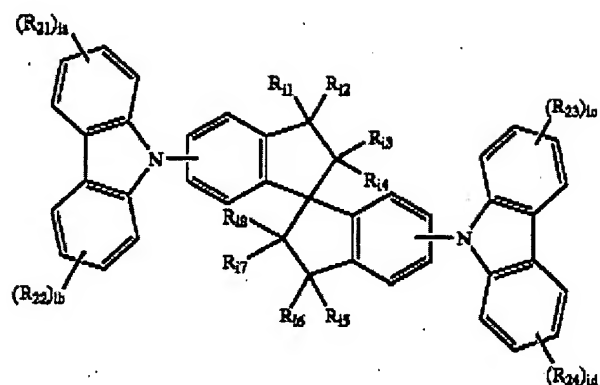
Thoms discloses guest-host emissive system used in a light emitting layer for an organic electroluminescent device wherein the host material is



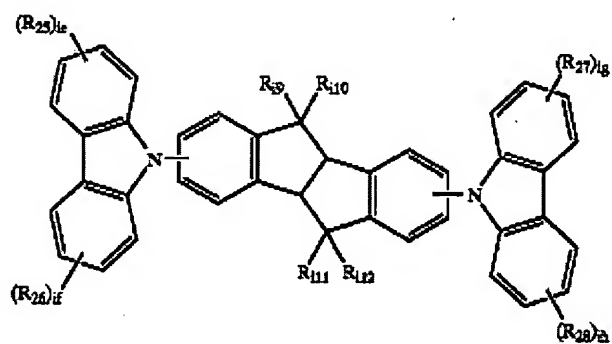
with R<sup>1</sup> being an aryl group (see paragraph 0029). The reference also discloses that the light-emitting layer also comprises a phosphorescent emitter with a wavelength shorter than 500 nm as per the present claims 43-51 (see reference claim 14).

Claims 22-35 are allowed. The prior art does not provide for an organic electroluminescent element comprising an anode, a cathode and a component layer including a light emission layer, the component layer being provided between the anode and the cathode, wherein the component layer contains a compound represented by formulae I1, I2, I3, ~~I1 or I2~~

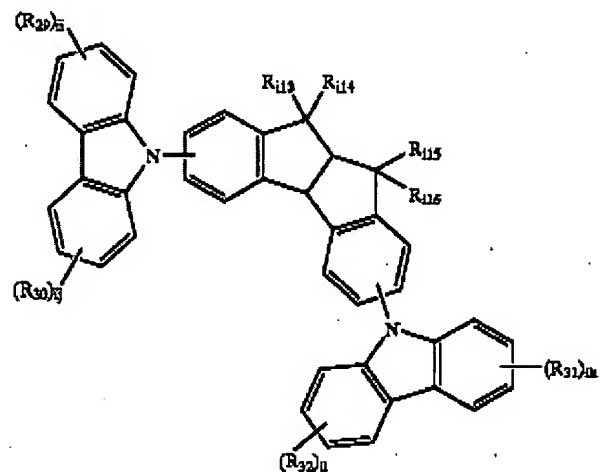
Art Unit: 1774



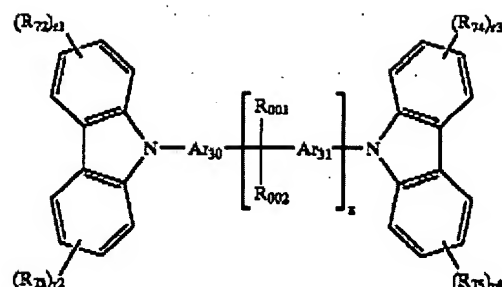
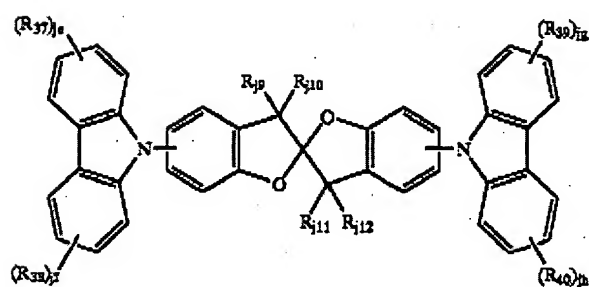
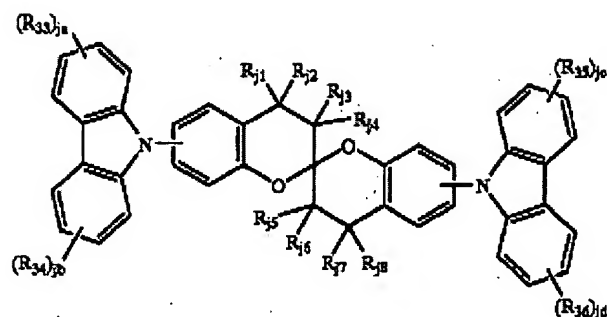
[0066] Formula I2



[0067] Formula I3



Art Unit: 1774



wherein  $R_{11-116}$  independently represent a hydrogen atom, an alkyl group, a cycloalkyl group, an aralkyl group, an alkoxy group or a halogen atom;  $R_{21-32}$  independently represent a hydrogen atom, a substituted or unsubstituted alkyl group, a substituted or unsubstituted cycloalkyl group, a substituted or unsubstituted aralkyl group, a substituted or unsubstituted aryl group, a substituted or unsubstituted alkoxy group, a substituted or unsubstituted aryloxy group, a cyano group, a hydroxyl group, a substituted or unsubstituted alkenyl group, or a halogen atom; and  $i$  and  $j$  independently represent an integer of from 1 to 4;  $R_{j1-j12}$  independently represents a hydrogen atom, an alkyl group, a cycloalkyl group, an aralkyl group, an alkoxy group or a halogen atom;  $R_{33-40}$  independently represent a hydrogen atom, a substituted or unsubstituted alkyl group, a substituted or unsubstituted cycloalkyl group, a substituted or unsubstituted aryl group, a



Art Unit: 1774

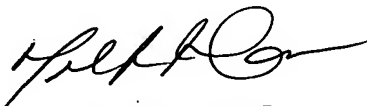
substituted or unsubstituted aralkyl group, a substituted or unsubstituted alkoxy group, a substituted or unsubstituted aryloxy group, a cyano group, a hydroxyl group, a substituted or unsubstituted alkenyl group, or halogen atom; and ja-jh independently represent an integer of from 1 to 4.

***Response to Arguments***

9. Applicant's arguments with respect to claims 1-35 and 43-51 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communication from the examiner should be directed to Camie S. Thompson whose telephone number is (571) 272-1530. The examiner can normally be reached on Monday through Friday from 7:30 am to 4:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton Cano, can be reached at (571) 272-1398. The fax phone number for the Group is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
MILTON I. CANO  
SUPERVISORY PATENT EXAMINER